



Treatment of Chronic Heart Failure in Patients with Type 2 Diabetes Mellitus

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Abstract. Among the main etiofactors of chronic heart failure (CHF) is type 2 diabetes mellitus. The management of patients with diabetes mellitus and CHF raises many questions.

Purpose: To identify the prevalence of CHF in patients with type 2 diabetes mellitus in a representative sample of Samarkand respondents and to evaluate their treatment. Two groups of patients with type 2 diabetes mellitus were examined: the 1st group was composed of patients from the unorganized urban population, the 2nd group - of patients, who were hospitalized. The prevalence of CHF in Group 2 patients (78%) was comparable with Group 1 patients (82%). The analysis of CHF treatment efficacy in a representative sample showed that the drug treatment from the cardiologist's point of view was not carried out to the appropriate extent. CHF complicates the course of type 2 diabetes mellitus in the majority of enrolled patients. The therapy aimed at the correction of cardiovascular abnormalities in patients with diabetes mellitus and heart failure, carried out Doctors in the system of practical healthcare require optimization according to national recommendations.

Keywords: chronic heart failure, diabetes mellitus type 2, treatment

Introduction

Chronic heart failure (CHF) is one of the most important problems of modern cardiology today. Diabetes mellitus type 2 is ranked 3rd-4th among the etiofactors of CHF according to the Third Revision of the National Guidelines for Chronic Obstructive Pulmonary Disease (2010). Epidemiological studies suggest that between 15 and 26% of patients with CHF have diabetes mellitus type 2. About 12% of patients with type 2 diabetes have signs of CHF. In the presence of diabetes mellitus, the relative risk of death from cardiovascular disease is 2.2-13.3 times higher than in those without diabetes mellitus.

There have been significant changes in the recommendations for the treatment of CHF in diabetic patients over the last 10-15 years. Modern β -blockers have not only ceased to be contraindicated in such patients, but, on the contrary, have become part of the group of essential medicines. The risk of using low-dose thiazide and thiazide-like diuretics as not only diuretics but also as antihypertensive agents has been exaggerated. All this determines the relevance of studying CHF in DM-2 patients for timely diagnosis and optimization of CHF prevention and treatment strategy in this category of patients. At the same time, no such data obtained in a focused study have been found in the national literature.

MATERIAL AND METHODS

Two groups of patients were included in the study: the 1st included 96 DM-2 patients who fell into a random 5% sample from a city register; the 2nd group included 102 DM-2 patients who were hospitalized for 3 months in a specialized endocrinology department of Samarkand Oblast Hospital.

The diagnosis of CHF was made according to the national guidelines of the second revision, including clinical symptomatology (dyspnea at previous habitual physical activity, palpitations, unmotivated cough, signs of fluid retention, data from clinical status scoring, 6 minute walking test (6MWT) and data from instrumental studies, special attention was paid to signs of left ventricular systolic and/or diastolic dysfunction in B- and M-mode echocardiograms. Age, gender and body mass index (BMI) of patients were taken into account in T6MX assessment according to the formulas:

- for men: $1,140 - 5.61 \cdot \text{BMI} - 6.94 \cdot \text{age}$;
- for women: $1\,017 - 6.24 \cdot \text{BMI} - 5.83 \cdot \text{age}$

The diagnosis of CHF in the follow-up phase of the practical healthcare system was assessed by reviewing the outpatient medical records: the medical records of the outpatient patient, with particular attention to the sheet of revised diagnoses and, if available, extracts from the medical records of the inpatient patient.

Medicines taken by respondents were subdivided into main medicines for the treatment of CHF (angiotensin-converting enzyme inhibitors (iACEIs), β -blockers, diuretics, cardiac glycosides, aldosterone antagonists) and medicines for the treatment of various manifestations of cardiovascular disease, i.e. adjuvant Aspirin, nitrates, calcium tubule blockers, etc.

RESULTS AND DISCUSSION

The results of this study showed that the prevalence of CHF in the group of patients treated in the endocrinology department (78%) was comparable to that of a 5% random sample of patients from the Samarkand DM-2 register (82%, $p > 0.05$). The vast majority of patients surveyed were women, both among outpatients (82% women, 18% men) and inpatients (66% and 34% respectively). In the city register of patients with T2DM, 76.4% of women and 23.6% of men were women. These figures did not differ significantly from the gender distribution of outpatients and inpatients taken under observation.

Signs of CHF were found in 15 (88,2%) men out of 17 and in 64 (81,0%) women out of 79 outpatients, and in 70.0% of men and 81.7% of women outpatients ($p > 0.05$). Age-standardised prevalence of CHF among men and women showed no statistically significant difference.

The leading cause of CHF in diabetes in outpatients, The leading cause of CVD in outpatients is concomitant coronary heart disease (CHD) and arterial hypertension (AH) (51.56%) and inpatients - AH (52.0%). AH predominates (52.0%). Interestingly, in most cases (more than 70.0% of patients) the development of AH and CHD preceded the development of diabetes, and in the remaining almost simultaneously develop these diseases. Targeted examination of patients has been found that

ambulatory diagnostics of CHF leads to underdiagnosis in 17.0% of male and almost 15% of female patients. In women it is overdiagnosed in 5% of women. Patients younger than 55 years prevailed among those surveyed (17.9% outpatients and 22.3% inpatients) who were not diagnosed with CHF. This group included respondents with mild to moderate diabetes, some of whom had neither AH nor CHD, who regularly received hypotensive therapy (iAPT), had normal body weight or were pre-diabetic (complaining of shortness of breath, including at rest, recurrent palpitations and a history of elevated BP or AH). The efficacy analysis of CHF treatment in a representative sample showed that while the treatment of carbohydrate metabolism disorders was satisfactory (antidiabetic drugs -81.1%, insulin therapy - 18.9%) the cardiologist did not treat adequately.

The leading prescribers are iAPPs (66.40% - outpatient, 89.0% inpatient; $p < 0.05$), i.e. Whereas in hospital, the frequency of the gold standard in CHF treatment was in line with the norms (about 90%), approximately 25% of outpatients were unreasonably deprived of the main pathogenetic agent treatment of CHF.

The frequency of β -adreno-blockers (ARBs) prescribed by community physicians and inpatients was also significantly different (20.1% and 77.0%, respectively; $p < 0.0001$). This can be explained by the long-standing debate on the feasibility and appropriateness of prescribing ARBs in the setting of diabetes. Considering that the positive effects of modern vasodilator-assisted ARBs (metoprolol (metoprolol, bisoprolol, carvedilol, nebivolol) In patients with diabetes, it may be necessary to discontinue these therapies. The positive effects of modern vasodilators (metoprolol, bisoprolol, carvedilol, nebivolol) persist in patients with diabetes.

Aldactone (3.3%) is practically not used in outpatients, although it is one of the main drugs used to treat CHF.

It should be noted that outpatients of respondents with CHF symptoms received only two drugs from the main group of drugs (iAPP and diuretics) in 12.0% of cases, three (iAPP, diuretic, β -adrenoblocker) - only 16.0%.

It is also noteworthy that the doses of essential medicines for the treatment of CHF in outpatients in a number of cases did not comply with the proposed treatment standards and were significantly lower than the recommended doses. At the same time average daily doses of drugs taken by the patients with severe CHF did not differ from those of I-II class patients, which indicates the absence of dosage adjustment depending on CHF status. The dosage regimen was not adjusted depending on CHF status.

In hospital, the majority of patients (72.0%) were prescribed three or more drugs from the core group of CVD drugs according to national guidelines, with titration of their dose.

CONCLUSIONS

1. Chronic heart failure complicates the course of type 2 diabetes mellitus in the majority of enrolled patients.
2. Targeted screening increases the detection of this syndrome by 15-17%.
3. The therapy aimed at the correction of cardiovascular disorders in patients with diabetes mellitus and heart failure, carried out by doctors of practical health care system, requires optimization in accordance with national recommendations.

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